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EXAMINER

LU, FRANK WEI MIN

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/373,585
Filing Date: August 13, 1999
Appellant(s): OGURA, NOBUHIKO

Ruthleen E. Uy
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed on February 28, 2007 appealing from the Office action mailed on November 30, 2006.

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(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Non-Final

The appellant's statement of the status of amendments after final rejection contained in the brief is incorrect. The status of amendments is after non-final rejection.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

Stimpson (US Patent No. 6,037,186, filed on July 16, 1997).

Shuminov (US Patent No. 5,808,554, 102(e) date: July 2, 1997).

Biedermann *et al.*, (US Patent No. 4,881,439, published on November 21, 1989).

(9) Grounds of Rejection

1. Claims 6, 7, 21, 22, 25-29, and 31-33 are rejected under 35 U.S.C. 102(e) as being anticipated by Stimpson (US Patent No. 6,037,186, filed on July 16, 1997).

Stimpson teaches parallel production of high density arrays.

Regarding claims 6, 22, 25, and 29, claim 6 is drawn to an apparatus for manufacturing a test piece for use in biological analysis of a sample organism comprising a strip-like substrate bearing thereon numbers of known specific binding agents which are different from each other and are arranged in a line at predetermined intervals in the longitudinal direction of the strip-like substrate, the apparatus comprising: a plurality of applicators arranged at predetermined interval in a first direction relative to a sheet-like substrate each of said plurality of applicators respectively operable to apply one of the plurality of known specific binding agents on the sheet-like substrate, a conveyor which conveys the plurality of applicators or the sheet-like substrate relative to each other in a second direction which is substantially perpendicular to the first

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direction while the applicators apply the plurality of known specific binding agents, thereby applying the plurality of known specific binding agents in lines which extend in the second direction and are arranged at predetermined intervals in the first direction, and a cutting means which cuts the sheet-like substrate bearing thereon the plurality of specific binding agents in the first direction into a plurality of strips. Since the phrase “for manufacturing a test piece for use in biological analysis of a sample organism comprising a strip-like substrate bearing thereon numbers of known specific binding agents which are different from each other and are arranged in a line at predetermined intervals in the longitudinal direction of the strip-like substrate” in claim 6 is intended use of the apparatus and are not structural limitations, a test piece, a strip-like substrate, and numbers of known specific binding agents recited in claim 6 are not structural limitations of claim 6 and the apparatus in claim 6 only comprises: (1) a plurality of applicators arranged at predetermined interval in a first direction wherein each of said plurality of applicators respectively can be operable to apply one of the plurality of known specific binding agents on a sheet-like substrate; (2) a conveyor which conveys the plurality of applicators in a second direction which is substantially perpendicular to the first direction while the applicators apply the plurality of known specific binding agents; and (3) a cutting means which can cut the sheet-like substrate bearing thereon the plurality of specific binding agents in the first direction into a plurality of strips. Claim 25 further limits claim 6 and requires that said predetermined intervals comprise a fixed number of intervals while claim 29 further limits claims 6 and 7 and requires that the apparatus comprises a fiat surface accommodating the sheet-like substrate. Since Stimpson teaches that, using reagent jet printing, lines of different DNA samples such as cDNA libraries are applied to the sheet in lines or otherwise a pin applicator so that multiple dots

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from the pin overlap to form a line wherein the different reagent lines on the sheet are formed as close together as possible and with minimum line width allowed by the printing method so that array density is maximized (see column 7, lines 19-48, column 8, third paragraph and Figure 2A), Stimpson discloses a plurality of applicators (ie., reagent dispensers) as recited in claims 6 and 25. Since conveyor can be considered as an apparatus for moving material from one point to another in a continuous fashion (see attached definition for conveyor) and Stimpson teaches that an automated device to apply the multitude of reagents to a 21.5 foot sheet is assembled from an X-Y-Z table (e.g. Asymtek) fitted with a reagent dispenser, a step motor controlled take up spool and an adjustable drag pay-out spool (see column 8, third paragraph and Figure 2C) and the reagent dispensers (ie., a plurality of applicators) are perpendicular to the 21.5 foot sheet when they apply the multitude of reagents (see Figure 2B), Stimpson discloses a conveyor recited in claim 6. Since Stimpson teaches that the roll of membrane is fed through guides on the X-Y-Z table surface and Y table of the automated device is flat (see column 8, third paragraph and Figure 2C), Stimpson discloses the apparatus (ie., the automated device) comprising a flat surface accommodating the sheet-like substrate as recited in claim 29 (for the rejection on claim 7, see below). Since Stimpson teaches that the sheet with different DNA samples is cut with a razor blade (for example, see column 14, last paragraph) and the razor blade has an ability to cut the sheet-like substrate bearing thereon the plurality of specific binding agents in the first direction into a plurality of strips, Stimpson discloses a cutting means as recited in claim 6. Since the phrases "each of said plurality of applicators respectively operable to apply one of the plurality of known specific binding agents on the sheet-like substrate", "which conveys the plurality of applicators or the sheet-like substrate relative to each other in a second direction

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which is substantially perpendicular to the first direction while the applicators apply the plurality of known specific binding agents, thereby applying the plurality of known specific binding agents in lines which extend in the second direction and are arranged at predetermined intervals in the first direction” and “which cuts the sheet-like substrate bearing thereon the plurality of specific binding agents in the first direction into a plurality of strips” recited in claim 6 and the phrase “wherein each of said plurality of applicators synchronously apply the plurality of known specific binding agents on the sheet-like substrate” recited in claim 22 are functional limitations and are not structural limitations, although Stimpson does not specially indicate that their apparatus can perform the functions of the apparatus recited in claims 6 and 22, note that, while features of an apparatus may be recited either structurally or functionally, the claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. *In re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997) (The absence of a disclosure in a prior art reference relating to function did not defeat the Board’s finding of anticipation of claimed apparatus because the limitations at issue were found to be inherent in the prior art reference); see also *In re Swinehart*, 439 F.2d 210, 212-13, 169 USPQ 226, 228-29 (CCPA 1971); *In re Danly*, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). “[A]pparatus claims cover what a device is, not what a device does.” *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990) (emphasis in original). A claim containing a “recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus” if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987) (see MPEP 2114).

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Regarding claims 7, 21, 27, 28, and 31-33, since claim 6 is directed to an apparatus for manufacturing a test piece for use in biological analysis of a sample organism comprising a strip-like substrate bearing thereon numbers of known specific binding agents which are different from each other and are arranged in a line at predetermined intervals in the longitudinal direction of the strip-like substrate, the test piece recited in claim 6, the binding agents recited in claims 6, 7, 21, 27, and 31, and the strip-like substrate recited in claims 6, 21, 28, 31, and 32 are not structural parts of the apparatus of claim 6, and claims 7, 21, 27, 28, 31, and 32 are used to further limit the binding agents and the strip-like substrate recited in claim 6, claims 7, 21, 27, 28, 31, and 32 are anticipated by Stimpson. Since a strip-like substrate is not a structural part of the apparatus of claim 6 and claim 33 is used to further limit a first direction in claim 6, claim 33 is anticipated by Stimpson.

Regarding claim 26, claim 26 is drawn to an apparatus for manufacturing a test piece for use in biological analysis of a sample organism comprising a strip-like substrate bearing thereon numbers of known specific binding agents which are different from each other and are arranged in a line at predetermined intervals in the longitudinal direction of the strip-like substrate, the apparatus comprising: a plurality of applicator means arranged at predetermined interval in a first direction relative to a sheet-like substrate each of said plurality of applicators respectively operable to apply one of the plurality of known specific binding agents on the sheet-like substrate, a conveyor means which conveys the plurality of applicators or the sheet-like substrate relative to each other in a second direction which is substantially perpendicular to the first direction while the applicators apply the plurality of known specific binding agents, thereby applying the plurality of known specific binding agents in lines which extend in the second

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direction and are arranged at predetermined intervals in the first direction, and a cutting means which cuts the sheet-like substrate bearing thereon the plurality of specific binding agents in the first direction into a plurality of strips. Since the phrase “for manufacturing a test piece for use in biological analysis of a sample organism comprising a strip-like substrate bearing thereon numbers of known specific binding agents which are different from each other and are arranged in a line at predetermined intervals in the longitudinal direction of the strip-like substrate” in claim 26 is intended use of the apparatus and are not structural limitations, a test piece, a strip-like substrate, and numbers of known specific binding agents recited in claim 26 are not structural limitations of claim 26 and the apparatus in claim 26 only comprises: (1) a plurality of applicator means arranged at predetermined interval in a first direction wherein each of said plurality of applicators respectively can be operable to apply one of the plurality of known specific binding agents on a sheet-like substrate; (2) a conveyor means which conveys the plurality of applicators in a second direction which is substantially perpendicular to the first direction while the applicators apply the plurality of known specific binding agents; and (3) a cutting means which can cut the sheet-like substrate bearing thereon the plurality of specific binding agents in the first direction into a plurality of strips. According to MPEP 2182, “[T]he ‘means or step plus function’ limitation should be interpreted in a manner consistent with the specification disclosure” and “[I]f the specification defines what is meant by the limitation for the purposes of the claimed invention, the examiner should interpret the limitation as having that meaning. If no definition is provided, some judgment must be exercised in determining the scope of the limitation”. Since the specification does not define “applicator means” and Stimpson teaches that, using reagent jet printing, lines of different DNA samples such as cDNA libraries

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are applied to the sheet in lines or otherwise a pin applicator so that multiple dots from the pin overlap to form a line wherein the different reagent lines on the sheet are formed as close together as possible and with minimum line width allowed by the printing method so that array density is maximized (see column 7, lines 19-48, column 8, third paragraph and Figure 2A), Stimpson discloses a plurality of applicator means (ie., reagent dispensers) as recited in claim 26. Since the specification does not define "conveyor means", conveyor can be considered as an apparatus for moving material from one point to another in a continuous fashion (see attached definition for conveyor), and Stimpson teaches that an automated device to apply the multitude of reagents to a 21.5 foot sheet is assembled from an X-Y-Z table (e.g. Asymtek) fitted with a reagent dispenser, a step motor controlled take up spool and an adjustable drag pay-out spool (see column 8, third paragraph and Figure 2C) and the reagent dispensers (ie., a plurality of applicator means) are perpendicular to the 21.5 foot sheet when they apply the multitude of reagents (see Figure 2B), Stimpson discloses a conveyor means recited in claim 26. Since the specification does not define "cutting means" and Stimpson teaches that the sheet with different DNA samples is cut with a razor blade (for example, see column 14, last paragraph) and the razor blade has an ability to cut the sheet-like substrate bearing thereon the plurality of specific binding agents in the first direction into a plurality of strips, Stimpson discloses a cutting means as recited in claim 26.

Therefore, Stimpson teaches all limitations recited in claims 6, 7, 21, 22, 25-29, and 31-33.

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2. Claims 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stimpson (July 16, 1997) as applied to claims 6, 7, 21, 22, 25-29, and 31-33 above, and further in view of Shuminov (US Patent No. 5,808,554, 102(e) date: July 2, 1997).

The teachings of Stimpson have been summarized previously, *supra*.

Stimpson does not disclose a conveyor belt as recited in claim 23 and a guide rail as recited in claim 24. Since Stimpson teach that the sheet with different DNA samples is cut with a razor blade (for example, see column 14, last paragraph), the cutting means (ie., the razor blade) must have a cutting edge as recited in claim 24.

Shuminov teaches a conveyor belt and a guide rail. He teaches moisture detecting liner for a diaper and a process for manufacture thereof a production line for manufacturing the diaper. Figure 4a shows schematically a production line for manufacturing the diaper. The production line comprises a drum 48 constituting a first roll, which feeds a tissue-type material 49 under a guide rail 50 so that, as the absorbent layer 45 passes underneath the **guide rail 50**, the tissue-type layer 49 is compacted on to the absorbent layer 45 thus forming a composite layer which is cut by a **cutter 51** so that the tissue-type layer 49 extends along the complete length of the absorbent layer 45 and across the narrow section of its I-shaped contour. The composite layer passes along the **conveyor belt 46**, downstream of which are disposed, on opposite sides of the conveyor belt 46, a pair of drums 52 and 53 constituting, respectively, second and third rolls, which feed corresponding innermost and outermost layer material 54 and 55 so as to cover opposite surfaces of the composite layer comprising the absorbent layer 45 and the tissue-type layer 49. The resulting assembly is cut by a cutter 56 so as to produce the finished diaper (see

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Figure 4a and column 6, lines 5-21). The phrase “wherein said cutting edge moves along said guide rail” recited in claim 24 is a function of the cutting edge and is not a structural limitation.

Therefore, it would have been *prima facie* obvious to one having ordinary skill in the art at the time the invention was made to have added a conveyor belt as recited in claim 23 and a guide rail as recited in claim 24 into the apparatus recited in claim 6 in view of the patents of Stimpson and Shuminov. One having ordinary skill in the art would have been motivated to do so because addition of a guide rail and a conveyor belt onto the apparatus recited in claim 6 would add more functions onto the apparatus recited in claim 6 such as compacting a sheet (ie., a composition layer) by passing the sheet underneath of the guide rail and delivering a sheet (ie., a composition layer) to a cutter using the conveyor belt so that the sheet is cut to a designed size (ie., finished diaper) (see Shuminov, column 6, lines 5-21). One having ordinary skill in the art at the time the invention was made would have been a reasonable expectation of success to add a conveyor belt as recited in claim 23 and a guide rail as recited in claim 24 into the apparatus recited in claim 6.

3. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stimpson (July 16, 1997) in view of Shuminov (July 2, 1997) as applied to claims 6, 7, 21-29, and 31-33 above, and further in view of Biedermann *et al.*, (US Patent No. 4,881,439, published on November 21, 1989).

The teachings of Stimpson and Shuminov have been summarized previously, *supra*.

Stimpson and Shuminov do not disclose a guide rail located on an upper body portion of said cutting means as recited in claim 30.

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Biedermann *et al.*, teach a guide rail located on an upper body portion of a cutting means (ie., a cutter) (see Figure 4 and column 2, last paragraph).

Therefore, it would have been *prima facie* obvious to one having ordinary skill in the art at the time the invention was made to have modified the guide rail recited in claim 24 so that the guide rail locates on an upper body portion of said cutting means as recited in claim 30 in view of the patents of Stimpson, Shuminov and Biedermann *et al.*. One having ordinary skill in the art would have been motivated to do so because the guide rail located on an upper body portion of said cutting means would provide a holder for said cutting means (see Biedermann *et al.*, column 1, lines 36-44). One having ordinary skill in the art at the time the invention was made would have been a reasonable expectation of success to modify guide rail recited in claim 24 in order to provide a support for attaching a cutting means (ie., a cutter).

(10) **Response to Arguments**

I. In page 12, second paragraph bridging to page 13, first paragraph of the Brief on Appeal, appellant argued that “[R]ejection Over Stimpson and Hayes is Legally Ineffective”.

This argument has been fully considered but it is not persuasive toward the withdrawal of the rejection because the rejection under 35 U.S.C 102 is not based on the prior art from both Stimpson and Hayes but is based on the prior art of Stimpson alone (see above rejection under 35 U.S.C 102).

II. In page 13, second paragraph of the Brief on Appeal, appellant argued that “[T]he Examiner cites Hayes (Office Action of January 10, 2005 at page 3) for teaching the claimed

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applicators; however, Hayes merely indicates the use of, for example, reagent [reagent] jetting head. See Hayes col. 4, lines 50-60. There is no indication that the reagent [reagent] jetting heads of Hayes or that the liquid application of Stimpson, are arranged and conveyed, as recited in claim 26”.

This argument has been fully considered but it is not persuasive toward the withdrawal of the rejection because the rejection under 35 U.S.C 102 is not based on the prior art from both Stimpson and Hayes but is based on the prior art of Stimpson alone (see above rejection under 35 U.S.C 102).

III. In page 13, last paragraph bridging to page 14, first paragraph of the Brief on Appeal, appellant argued that “[T]here is no indication that the reagent [reagent] jetting printer of Stimpson includes applicators arranged and conveyed, as recited in claim 26. Therefore, there is no teaching in Stimpson, that a plurality of applicator means are arranged at predetermined interval in a first direction relative to a sheet-like substrate and that a conveyor means conveys the plurality of applicators or the sheet-like substrate relative to each other in a second direction which is substantially perpendicular to the first direction while the applicators apply the plurality of known specific binding agents”.

These arguments have been fully considered but they are not persuasive toward the withdrawal of the rejection. First, since the specification does not define “applicator means” and Stimpson teaches that, using reagent jet printing, lines of different DNA samples such as cDNA libraries are applied to the sheet in lines or otherwise a pin applicator so that multiple dots from the pin overlap to form a line wherein the different reagent lines on the sheet are formed as close

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together as possible and with minimum line width allowed by the printing method so that array density is maximized (see column 7, lines 19-48, column 8, third paragraph and Figure 2A), Stimpson must disclose a plurality of applicator means (ie., reagent dispensers) which are arranged at predetermined interval in a first direction as recited in claim 26 in order to apply lines of different DNA samples such as cDNA libraries to the sheet in lines so that the different reagent lines on the sheet are formed as close together as possible. Furthermore, since the specification does not define "conveyor means", conveyor can be considered as an apparatus for moving material from one point to another in a continuous fashion (see attached definition for conveyor), and Stimpson teaches that an automated device to apply the multitude of reagents to a 21.5 foot sheet is assembled from an X-Y-Z table (e.g. Asymtek) fitted with a reagent dispenser, a step motor controlled take up spool and an adjustable drag pay-out spool (see column 8, third paragraph and Figure 2C) and the reagent dispensers (ie., a plurality of applicator means) are perpendicular to the 21.5 foot sheet when they apply the multitude of reagents (see Figure 2B), Stimpson must disclose a conveyor means which conveys the plurality of applicators in a second direction which is substantially perpendicular to the first direction while the applicators apply the plurality of known specific binding agents as recited in claim 26. Second, as stated in above rejection, the sheet-like substrate is not a structural limitation of claim 26.

IV. In page 14, last paragraph bridging to page 16, first paragraph of the Brief on Appeal, appellant argued that "[C]laim 26 specifically recites an "apparatus for manufacturing a test piece for use in biological analysis of a sample organism comprising a strip-like substrate bearing thereon numbers of known specific binding agents which are different from each other

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and are arranged in a line at predetermined intervals in the longitudinal direction of the strip-like substrate". Therefore, contract to the examiner's assertion, claim 26 specially recites that the binding agents are arranged in a line at predetermined intervals in the longitudinal direction of the strip-like substrate"; and "in Stimpson, the reagent is applied in a direction perpendicular to a longitudinal direction of the 21.5 foot sheet, as seen in Fig. 2C, and is not in lines in the longitudinal direction of the strip-like substrate".

These arguments have been fully considered but they are not persuasive toward the withdrawal of the rejection. MPEP 2114 states that "[W]hile features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. *In re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997) (The absence of a disclosure in a prior art reference relating to function did not defeat the Board's finding of anticipation of claimed apparatus because the limitations at issue were found to be inherent in the prior art reference); see also *In re Swinehart*, 439 F.2d 210, 212-13, 169 USPQ 226, 228-29 (CCPA 1971); *In re Danly*, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). '[A]pparatus claims cover what a device is, not what a device does.' *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990) (emphasis in original)" and "[A] claim containing a 'recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus' if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987)". Since the phrase "[A]n apparatus for manufacturing a test piece for use in biological analysis of a sample organism

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comprising a strip-like substrate bearing thereon numbers of known specific binding agents which are different from each other and are arranged in a line at predetermined intervals in the longitudinal direction of the strip-like substrate” in claim 26 is read as an apparatus for manufacturing a test piece for use in biological analysis of a sample organism wherein the test piece comprises a strip-like substrate bearing thereon numbers of known specific binding agents and the known specific binding agents are different from each other and are arranged in a line at predetermined intervals in the longitudinal direction of the strip-like substrate, a test piece, a strip-like substrate, and numbers of known specific binding agents recited in claim 26 are not structural limitations of claim 26 and the phrase “for manufacturing a test piece for use in biological analysis of a sample organism comprising a strip-like substrate bearing thereon numbers of known specific binding agents which are different from each other and are arranged in a line at predetermined intervals in the longitudinal direction of the strip-like substrate” in claim 26 is intended use of the apparatus. In other word, the limitation “the binding agents are arranged in a line at predetermined intervals in the longitudinal direction of the strip-like substrate” argued appellant is not a structural limitation of claim 26.

V. In page 16, second and third paragraphs of the Brief on Appeal, appellant argued that “[C] laim 26 further recites ‘a cutting means which cuts the sheet-like substrate bearing thereon the plurality of specific binding agents in the first direction into a plurality of strips.’ However, at no point is cutting of a sheet-like substrate performed Stimpson. In particular, cutting is performed in Stimpson after a sheet is rolled into a rod shape. See col. 5, lines 33-36; Figs. 1C, 2E, and 2D. In addition, there is no indication that the razor of Stimpson cuts a sheet-like substrate in a first direction into a plurality of strips. In the Advisory Action of February 24,

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2006, the Examiner asserts that the Appellant has not shown evidence that the razor or Stimpson cannot cut a sheet-like substrate in a first direction into a plurality of strips. However, as discussed above, the sheet of Stimpson is rolled into a rod shape. Therefore, Stimpson does not disclose cutting a sheet-like substrate into a plurality of strips”.

These arguments have been fully considered but they are not persuasive toward the withdrawal of the rejection. First, since the specification does not define “cutting means” and Stimpson teaches that the sheet with different DNA sample is cut with a razor blade (for example, see column 14, last paragraph) and the razor blade has an ability to cut the sheet-like substrate into a plurality of strips, Stimpson discloses a cutting means as recited in claim 26. Second, although cutting is performed in Stimpson after a sheet is rolled into a rod shape, appellant has no evidence to show that the razor or Stimpson cannot cut a sheet-like substrate into a plurality of strips. Third, as shown in above rejection and arguments, the sheet-like substrate is not a structural limitation of claim 26.

VI. In page 16, last paragraph bridging to page 17, first paragraph of the Brief on Appeal, appellant argued that “[A]ppellant submits that the cutting device of Stimpson is non-analogous to the claimed cutting means. In the present case, the razor of Stimpson is used to cut a sheet **which is rolled into a rod shape**, similar to a log shape, having a large diameter. The claimed cutting means cuts a sheet-like substrate, **which is flat** and would have to be supported differently from a rod shaped array, as disclosed in Stimpson. Consequently, it would not be obvious to one of skill in the art to apply the razor of Stimpson which is used to cut a rod shape array to cut the claimed sheet-like substrate”.

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These arguments have been fully considered but they are not persuasive toward the withdrawal of the rejection. Although the razor blade of Stimpson is used to cut a sheet which is rolled into a rod shape, the razor blade of Stimpson has an ability to cut the sheet-like substrate. Furthermore, appellant has no evidence to show that the razor or Stimpson cannot cut a sheet-like substrate into a plurality of strips. Therefore, "the cutting device of Stimpson is non-analogous to the claimed cutting means" argued by appellant is incorrect.

VII. In page 17, second paragraph bridging to page 18, first paragraph of the Brief on Appeal, appellant argued that "the Examiner asserts on page 4 of the Office Action dated July 27, 2005, that although Stimpson and Hayes do not specifically indicate that their apparatus can perform the functions of the apparatus recited in the claims, that claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. However, Appellant submits that a functional limitation must be evaluated and considered just like any other limitation of the claim, for what it fairly conveys to a person of ordinary skill in the pertinent art in the context in which it is used. MPEP 2173.05. For example, claim 6 is directed to a cutting means and claim 26 is directed to an applying means, conveying means, and cutting means. The claimed means-plus-function limitations require the Examiner to give patentable weight to the function of the recitation. See 35 U.S.C. § 112, sixth paragraph, and MPEP § 2184. The application of a prior art reference to a means or step plus function limitation requires that the prior art perform the identical function specified in the claim. MPEP § 2182. If a prior art reference teaches the identical function specified in the claim, then the Examiner carries the initial burden of proof to show that the prior art structure is equivalent to the structure described

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in the specification, which has been identified as corresponding to the claimed means. MPEP § 2182. Therefore, the functional language must be given due consideration”.

These arguments have been fully considered but they are not persuasive toward the withdrawal of the rejection. First, the rejection under 35 U.S.C 102 is not based on the prior art from both Stimpson and Hayes but is based on the prior art of Stimpson alone (see above rejection under 35 U.S.C 102). Second, appellant has no evidence to show that the examiner does not evaluate and consider a functional limitation just like any other limitation of the claim. Third, MPEP 2182 states that “[T]he ‘means or step plus function’ limitation should be interpreted in a manner consistent with the specification disclosure” and “[I]f the specification defines what is meant by the limitation for the purposes of the claimed invention, the examiner should interpret the limitation as having that meaning. If no definition is provided, some judgment must be exercised in determining the scope of the limitation”. Since the specification does not define “applicator means” and Stimpson teaches that, using reagent jet printing, lines of different DNA samples such as cDNA libraries are applied to the sheet in lines or otherwise a pin applicator so that multiple dots from the pin overlap to form a line wherein the different reagent lines on the sheet are formed as close together as possible and with minimum line width allowed by the printing method so that array density is maximized (column 7, lines 19-48, column 8, third paragraph and Figure 2A), Stimpson discloses a plurality of applicator means (ie., reagent dispensers) as recited in claim 26. Since the specification does not define “conveyor means”, conveyor can be considered as an apparatus for moving material from one point to another in a continuous fashion (see attached definition for conveyor), and Stimpson teaches that an automated device to apply the multitude of reagents to a 21.5 foot sheet is assembled from an X-

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Y-Z table (e.g. Asymtek) fitted with a reagent dispenser, a step motor controlled take up spool and an adjustable drag pay-out spool (see column 8, third paragraph and Figure 2C) and the reagent dispensers (ie., a plurality of applicator means) are perpendicular to the 21.5 foot sheet when they apply the multitude of reagents (see Figure 2B), Stimpson discloses a conveyor means recited in claim 26. Since the specification does not define "cutting means" and Stimpson teaches that the sheet with different DNA sample is cut with a razor blade (for example, see column 14, last paragraph) and the razor blade has an ability to cut the sheet-like substrate beating thereon the plurality of specific binding agents in the first direction into a plurality of strips, Stimpson discloses a cutting means as recited in claim 26.

VIII. In page 18, second paragraph of the Brief on Appeal, appellant argued that "as indicated above, in Stimpson, the reagent is applied in a direction perpendicular to a longitudinal direction of the 21.5 foot sheet (See Fig. 2C). Assuming *arguendo*, applicators are disclosed in Stimpson, there is no indication that such applicators would apply a reagent [reagent] in the longitudinal direction of the strip-like substrate. See also Appellant's claim 33. Therefore, contrary to the Examiner's assertions, it is not inherent that the applicators of Hayes and Stimpson, function as claimed. Moreover, the burden is upon the Examiner, not the Appellant, to establish that the cited references teach the claimed limitations".

These arguments have been fully considered but they are not persuasive toward the withdrawal of the rejection. First, the rejection under 35 U.S.C 102 is not based on the prior art from both Stimpson and Hayes but is based on the prior art of Stimpson alone (see above rejection under 35 U.S.C 102). Second, MPEP 2114 states that "[W]hile features of an apparatus

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may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. *In re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997) (The absence of a disclosure in a prior art reference relating to function did not defeat the Board's finding of anticipation of claimed apparatus because the limitations at issue were found to be inherent in the prior art reference); see also *In re Swinehart*, 439 F.2d 210, 212-13, 169 USPQ 226, 228-29 (CCPA 1971); *In re Danly*, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). '[A]pparatus claims cover what a device is, not what a device does.' *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990) (emphasis in original)' and "[A] claim containing a 'recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus' if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987)". Since the phrase "[A]n apparatus for manufacturing a test piece for use in biological analysis of a sample organism comprising a strip-like substrate bearing thereon numbers of known specific binding agents which are different from each other and are arranged in a line at predetermined intervals in the longitudinal direction of the strip-like substrate" in claim 26 is read as an apparatus for manufacturing a test piece for use in biological analysis of a sample organism wherein the test piece comprises a strip-like substrate bearing thereon numbers of known specific binding agents and the known specific binding agents are different from each other and are arranged in a line at predetermined intervals in the longitudinal direction of the strip-like substrate, a test piece, a strip-like substrate, and numbers of known specific binding agents recited in claim 26 are not

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structural limitations of claim 26 and the phrase “for manufacturing a test piece for use in biological analysis of a sample organism comprising a strip-like substrate bearing thereon numbers of known specific binding agents which are different from each other and are arranged in a line at predetermined intervals in the longitudinal direction of the strip-like substrate” in claim 26 is intended use of the apparatus. In other word, the limitation “apply a reagent in the longitudinal direction of the strip-like substrate” argued by appellant is not a structural limitation of claim 26.

XI. In page 18, last paragraph bridging to page 19, last paragraph of the Brief on Appeal, appellant argued that “[A]ppellant directed the Examiner's attention to, for example, page 16, line 26 to page 18, line 4 of Appellant's specification, which describes the claimed applicator means and conveyor means. Consequently, upon viewing the specification and its corresponding description in the drawings, it is apparent that the combination of Stimpson and Hayes do not teach the claimed applicator means and conveyor means” and “[A]ppellant submits that it would be apparent to one of ordinary skill in the art that the applicator ports and conveyor belt disclosed in Appellant's specification discloses the claims applicator means and conveyor means, respectively”.

These arguments have been fully considered but they are not persuasive toward the withdrawal of the rejection. According to MPEP 2182, “[T]he ‘means or step plus function’ limitation should be interpreted in a manner consistent with the specification disclosure” and “[I]f the specification defines what is meant by the limitation for the purposes of the claimed invention, the examiner should interpret the limitation as having that meaning. If no definition is

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provided, some judgment must be exercised in determining the scope of the limitation”.

Although page 16, line 26 to page 18, line 4 of the specification describes applicator ports and conveyor belt, the specification does not define applicator ports as applicator means and does not define conveyor belt as conveyor means. Thus the specification has no definitions for applicator means and conveyor means.

X. In page 20, first paragraph bridging to page 21, last paragraph of the Brief on Appeal, appellant argued that “[S]huminov is nonanalogous art” because (1) “[S]huminov pertains to the detection of moisture in a diaper by placing an electrode in the liner of the diaper. See Abstract. Therefore, it is unlikely that an inventor would look to a process for creating a diaper for teaching the apparatus for a strip-like substrate containing binding agents, as described in the present invention. Further, Shuminov including various compaction and assembly for a diaper would not be reasonably pertinent to the precision required in substrate assembly. Therefore, Shuminov may not be combined with Stimpson to teach elements of claims 23 and 24”; (2) “[S]timpson is directed to ‘Parallel Production of High Density Arrays’ and Shuminov is directed to ‘Moisture Detecting linear for a Diaper and a Process for the Manufacture Thereof.’ Therefore, contrary to the Examiner’s assertion, a conveyor is not a key element which would connect the Stimpson and Shuminov”; (3) “[S]huminov is clearly not in the same field of endeavor as the applicant's invention nor does Shuminov attempt to provide a method and system for reading a test piece and improve the sequence of specific binding agents on a test piece, as described in an exemplary embodiment of the present invention”; and (4) “the claim

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preamble clearly gives life and meaning to the claim for example, the provision of deposits of specific binding agents would indicate the non-applicability of the Shuminov diaper patent”.

These arguments have been fully considered but they are not persuasive toward the withdrawal of the rejection. First, in response to Appellant's argument that Shuminov is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, although “[S]timpson is directed to ‘Parallel Production of High Density Arrays’ and Shuminov is directed to ‘Moisture Detecting linear for a Diaper and a Process for the Manufacture Thereof’ and Shuminov's patent is not from biological field, since both Stimpson (see column 8, third paragraph and Figure 2C) and Shuminov (see Figure 4a and column 6, lines 5-21) teach conveyor, the prior art of Stimpson and the prior art of Shuminov are connected by conveyor and the prior art of Stimpson and the prior art of Shuminov are considered as an analogous art. Second, “deposits of specific binding agents” argued by Appellant is not a structural limitation of claims 6, 23, and 24.

XI. In page 22, first paragraph of the Brief on Appeal, appellant argued that “[A]lthough both Stimpson and Shuminov teach a conveyor, merely because both references teach a conveyor does not mean that the references teach the conveyor as claimed. The Examiner cannot randomly pick and choose elements of the prior art to teach the claimed elements when there is clearly no motivation or suggestion for the combination. The mere presence of a purportedly similar

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structure in disparate art does not justify a combination when the goals and purposes of each are not related. *A .J. Deer Co. v. US. Slicing Mach. Co.*, 21 F.2d 812, 813 (7th Cir. 1927). The Examiner's reasoning is clearly a result of impermissible hindsight”.

These arguments have been fully considered but they are not persuasive toward the withdrawal of the rejection. First, appellant has no evidence to show that the Examiner randomly picks and chooses elements of the prior art to teach the claimed elements when there is clearly no motivation or suggestion for the combination. Second, there is a motivation to combine Stimpson and Shuminov together (see above rejection under 35 U.S.C 103 related to claims 23 and 24). Third, in response to appellant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

XII. In page 20, first paragraph bridging to page 21, last paragraph of the Brief on Appeal, appellant argued that “[T]he art cited by the Examiner do not disclose a cutting edge and a guide rail as claimed” and “it would be very unlikely that one of skill in the art would modify the razor blade of stimpson (see col. 12, lines 11-15) to include a guide rail and cutting edge of Shuminov. The Examiner’s reasoning is clearly a result of hindsight”.

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These arguments have been fully considered but they are not persuasive toward the withdrawal of the rejection. First, since Stimpson teach that the sheet with different DNA samples is cut with a razor blade (for example, see column 14, last paragraph), the cutting means (ie., the razor blade) must have a cutting edge as recited in claim 24. Second, Shuminov teaches a guide rail as claimed (see Figure 4a and column 6, lines 5-21). Third, appellant has no evidence to show why it would be very unlikely that one of skill in the art would modify the razor blade of stimpson to include a guide rail and cutting edge of Shuminov. Furthermore, there is a motivation to combine Stimpson and Shuminov together (see above rejection under 35 U.S.C 103 related to claims 23 and 24). Fourth, in response to appellant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). In summary, in view of claim 23 or 24 and available prior art, it is hardly to image that addition of a conveyor belt or a guide rail to the apparatus of claim 6 is enough to differentiate the apparatus of claim 23 or 24 from the prior art.

XIII. In page 23, last paragraph bridging to page 26, first paragraph of the Brief on Appeal, appellant argues that: (1) “[T]he Examiner cited Shuminov guide rail 50 for teaching the claimed guard rail and cited the razor of Stimpson for teaching the claimed cutting means. See Office

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Action of July 27, 2005 at page 7. However, Stimpson col. 14, lines 51-60, describes that the spiral bundle is placed inside a metal tube whose inner diameter is slightly larger than the outer diameter of the bundle. The bundle is allowed to extend from the end of the metal tube and an array slab was cut with a razor blade using the metal tube as a guide to obtain a uniform straight cut. Therefore, it is unlikely that one of skill in the art would modify the cutting guide of Stimpson to include the guide rail 50 of Shuminov or the guide rail of Biedermann. Moreover, upon viewing the illustration of guide rail 50 of Shuminov (see Fig. 4a) it is unlikely that one of skill in the art would modify the guide rail 50 of Shuminov to form an upper body portion of the cutter 51 of Shuminov or that the guide rail 50 of Shuminov would be modified to include the guide rail 15 of Biedermann. In particular, such a modification would result in a substantial modification of the principle of operation of Shuminov”.

These arguments have been fully considered but they are not persuasive toward the withdrawal of the rejection. First, although Stimpson uses metal tube as a guide to obtain a uniform straight cut, appellant has no evidence to show why one having ordinary skill in the art at the time the invention was made cannot modify the guide rail recited in claim 24 so that the guide rail locates on an upper body portion of said cutting means in view of the patents of Stimpson, Shuminov and Biedermann *et al.*, Second, appellant has no evidence to show that the modification would result in a substantial modification of the principle of operation of Shuminov. In summary, in view of claim 30 and available prior art, it is hardly to image that incorporation of the guide rail recited in claim 24 to a cutting means to form an upper body portion of said cutting means is enough to differentiate the apparatus of claim 30 from the prior art. Third, the rejection is not based on the modification of the metal tube of Stimpson.

XIV. In page 26, second paragraph bridging to page 27, first paragraph of the Brief on Appeal, appellant argued that “[T]here is absolutely no teaching or suggestion in the prior art to modify the razor of Stimpson to include a guide rail as claimed. In Stimpson, a 1-2mm length of the bundle was allowed to extend from the end of a metal tube and an array slab was cut with a razor blade using the metal tube as a guide. See Stimpson col. 14, lines 53-56. The burden is upon the Examiner to show that it would be obvious to modify the razor of Stimpson with the claimed guide. Since the razor of Stimpson purportedly cuts the array in a uniform straight cut, there would be no reason for one to further add a guide rail as claimed. The Examiner's suggestion to modify the cutting device of Stimpson is clearly a result of impermissible hindsight upon viewing the Appellant's invention” and “[S]timpson discloses that a spiral bundle which is placed in a metal tube is used to obtain a uniform cut. There would be no need for another guide rail, which appears to merely be duplicative of the functions of the metal tube of Stimpson. Such duplicity is evidence that the Examiner's suggestion for the combination of Shuminov and Biedermann with Stimpson, is *not* obvious”.

These arguments have been fully considered but they are not persuasive toward the withdrawal of the rejection. First, there is a motivation to combine the patents of Stimpson, Shuminov and Biedermann *et al.*, because the guide rail located on an upper body portion of said cutting means would provide a holder for said cutting means (see Biedermann *et al.*, column 1, lines 36-44). Second, in response to appellant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight

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reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). Third, the rejection is based on the modification of Shuminov's guide rail but is not based on the modification of the razor of Stimpson or the addition of another guide rail as argued by appellant.

For the above reasons, it is believed that the rejections should be sustained.

Respectively submitted,

Frank Lu
June 20, 2007

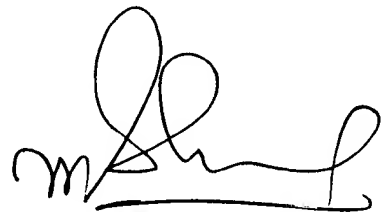


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(11) Related Proceeding(s) Appendix

The definition of “conveyor” from WEB.

The definition of "conveyor" from Web

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Definitions of Conveyor on the Web:

- An apparatus for moving material from one point to another in a continuous fashion. This is accomplished with an endless (that is, looped) procession of hooks, buckets, wide rubber belt, etc.
www.netl.doe.gov/coal/Coal%20Primer/glossary.html
- An oceanographic term for the north-on-top, south-near-the-bottom loop of current in the Atlantic Ocean, which includes the Gulf Stream and the North Atlantic Current. After sinking, it is called the North Atlantic Deep Water on the return loop. It is also thought to extend through the Indian Ocean into the Pacific Ocean and equilibrate the large salinity differences that would otherwise develop between Atlantic and Pacific. ...
williamcalvin.com/BrainForAllSeasons/glossary.htm
- means a device designed exclusively for transporting bulk materials, packages or objects in a predetermined path and having fixed or selective points of loading or discharge.
www.osha.gov/pls/oshaweb/owadisp.show_document
- A mechanical device used to move materials.
www.smartasn.org/glossary.html
- Conveyor A system consisting of a track and drive system which transports carriers through the terminal on a detachable lift (gondolas, detachable chairlifts). Conveyors are usually powered by power takeoff wheels driven by the haul rope, to ensure that carrier spacing remains constant.
www.skilifts.org/glossary.htm
- Any mechanical contrivance, such as endless chains or belts, for carrying material.
www.readinganthracite.com/glossary.htm
- A machine that transports materials from one place to another.
www.mindfully.org/Plastic/Ocean/Plastic-Aquatic-EPA842B92010-Dec92_6.htm
- A generic term for a class of materials-handling devices used to move things over a fixed line of travel.
www.blinco.com/solutions/glossary/logisticsae.htm
- Between Frame Rails: The distance between the (2) outside frames on a conveyor section. Sometimes referred to as effective BFR, which would represent the usable width of the conveying surface.
www.capspackaging.com/english/stretch_glossary.html
- A mechanical apparatus for carrying bulk material from place to place; for example, an endless moving belt or a chain of receptacles.
www.harvestenergy.com/GlossaryPower.html

- conveyor: a person who conveys (carries or transmits); "the conveyor of good tidings"
- conveyor belt: a moving belt that transports objects (as in a factory)

wordnet.princeton.edu/perl/webwn

- A conveyor belt or belt conveyor consists of two end pulleys, with a continuous loop of material that rotates about them. The pulleys are powered, moving the belt and the material on the belt forward. Conveyor belts are extensively used to transport industrial and agricultural materials, such as grain, coal, ores, etc. Conveyor belts with regularly spaced partitions are often called elevator belts. Conveyor belts are used in self-unloading bulk freighters and in live bottom trucks. ...

en.wikipedia.org/wiki/Conveyor

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